

corresponding to diamagnetism. If, on the other hand, we hang in the water a ball which is heavier than water, its oscillations are not so great as that of the water in its vicinity, owing to its mass, and consequently the oscillations of the ball relatively to the water are in the opposite direction to those of the water itself, and there is attraction, corresponding to paramagnetism. A rod of cork and another of metal are suspended horizontally by threads in the trough. A vibrating drum is brought near to them; the cork rod sets itself equatorially, and the metal rod axially.

If a pellet of iron be floated by a cork on water and two similar poles (*e.g.* both north) be brought to its vicinity, one above and the other below the pellet, the latter cannot remain exactly in the centre, but will be repelled to a certain distance, beyond which however there is the usual attraction. The reason is that when the pellet is nearly in the line joining the two poles the north pole of the pellet (according to our supposition) is further from this line than the south one. The angle of action is less; so that although the north pole is further away, the horizontal component of the north pole repulsion may be greater than that of the south pole attraction. Dr. Bjerkes reproduces this experiment by causing two drums to pulsate in concord, the one above the other. A pellet fixed to a wire, which is attached by threads to two pieces of cork, is brought between the drums, and it is found impossible to cause it to remain in the centre.

Dr. Bjerkes conceived further the beautiful idea of tracing out the conditions of the vibrations of the water when acted on by pulsating drums. For this purpose he mounted a sphere or cylinder on a thin spring and fixed a fine paint-brush to the top of it. This is put into the water. The vibrations are in most cases so small that they could not be detected, but by regulating the pulsations so as to be isochronous with the vibrations of the spring, a powerful vibration can be set up. When this is done a glass plate mounted on four springs is lowered so as to touch the paint-brush, and the direction of a hydrodynamic line of force is depicted. Thus the whole field is explored and different diagrams are obtained according to the nature of the pulsations. Using two drums pulsating concordantly, we get a figure exactly like that produced by iron filings in a field of two similar magnetic poles. If the pulsations are discordant it is like the figure with two dissimilar poles. Three pulsating drums give a figure identical with that produced by three magnetic poles. The professor had previously calculated that the effects ought to be identical, and I think the same might have been gathered from the formulæ in Sir William Thomson's "Mathematical Theory of Magnetism," but this only enhances the beauty of the experimental confirmation.

Physicists have been in the habit of looking upon magnetism as some kind of molecular rotation. According to the present view it is a rectilinear motion. Physicists have been accustomed to look upon the conception of an isolated magnetic pole as an impossibility, but here, while the oscillating sphere represents a magnetic molecule with north and south poles, the pulsating drum represents an isolated pole. These are new conceptions to the physicist, let us see whither they lead us. The professor shows that if a rectilinear oscillation constitutes magnetism, a circular oscillation must signify an electric current, the axis of oscillation being the direction of the current. According to this view what would be the action of a ring through which a current is passing? If the ring were horizontal the inner parts of the ring would all rise together and all fall together, they would vibrate and produce the same effect as the rectilinear vibrations of a magnet. This is the analogue of the Amperian currents.

To illustrate the condition of the magnetic field in the neighbourhood of electric currents, Dr. Bjerkes mounted two wooden cylinders on vertical axes, connecting them

by link-work, which enabled him to vibrate them in the same or opposite ways. To produce enough friction he was forced to employ syrup in place of water. The figures which are produced on the glass plate are in every case the same as those which are produced by iron filings in the neighbourhood of electric currents, including the case of currents going in parallel and in opposite directions.

The theory is carried out a step further to explain the attraction and subsequent repulsion after contact of an electrified and a neutral substance and the passage of a spark. But it is extremely speculative, and is not as yet experimentally illustrated, and I think that at present it is better to pass it by.

I believe that the professor will exhibit his experiments and give some account of his mathematical investigations, which have occupied his time for five years, to the Académie des Sciences this afternoon. His results have not been published before.

GEORGE FORBES

Paris, August 15

NOTES

JOHN DUNCAN, the Alford weaver-botanist, has at last passed away, and his dust now lies under the earth whose beautiful children he knew and loved so well. He expired a little after noon on the 9th instant, in his eighty-seventh year, and was buried on the 16th in the old churchyard at Alford, in a selected spot, where a monument will soon be raised to his memory by the free-will offerings of those who admired his high character and pure-minded enthusiasm for science. The poor old man has not lived long to enjoy the comforts lately provided for him, but it is pleasant to think that this aged and unselfish student of nature passed the last days of his long and silent life in comparative affluence, and that he now rests in no pauper's grave. His life was so recently sketched in these pages (*NATURE*, vol. xxiii. p. 269) that it is unnecessary here again to rehearse it. In December last, when it was ascertained that, after an unusually laborious life, winning his daily bread by weaving, carried on till beyond his eighty-fifth year, he had through failing strength been at last reluctantly forced to fall on the parish for bare support, an appeal was made in his favour by Mr. Jolly, H.M. Inspector of Schools, in the newspaper press throughout the country, and in our own columns. The response was speedy and ample, so that in a very short time a sum of 326*l.* was spontaneously sent for his relief, with every expression of admiration and regret from all parts of the land, and from most of our most eminent scientific men, whose kindly appreciation of his scientific labours was not unfrequently very aptly and memorably put. His pride and appreciation of all this kindness were genuine, deep, and child-like, and were expressed not seldom in piquant and touching terms; so that his numerous friends have the great satisfaction of thinking, that by their means, though he has departed sooner than was anticipated, they have helped to comfort the evening of his days. His constitution was of the healthiest type, and his tenacity of life remarkable in a frame so exhausted, and he only passed away when the last particle of the expiring taper was slowly consumed. As already told in *NATURE* (vol. xxiv. p. 6), the money raised in John Duncan's behoof has been vested in seven trustees, under a trust-deed executed during his life. By its provisions his valuable books on botany and other sciences are bequeathed to the parish library of Alford for the use of the district; and all remaining funds are to be safely invested and the interest to be devoted for all time to the foundation of certain prizes, to be called by his name, for the promotion of the study of natural science, especially botany, amongst the children in certain parishes in and round the Vale of Alford. A memoir of the old man is now being written by Mr. Jolly, and will be anticipated with interest.

IN the death, on the 27th ult., of Mr. Hewett Cottrell Watson, at the age of seventy-seven, English botany has lost one of her most indefatigable workers. For the space of fifty years Mr. Watson has been a prolific writer on the geographical distribution of British plants, and on the distinguishing characters of the more "critical" species; and in these departments of botany he has left very few who can approach him in the extent and the accuracy of his knowledge. In addition to many smaller publications, and a vast number of contributions to periodical literature, the principal works with which his name will be associated are the "New Botanists' Guide" (1835-7), the "Cybele Britannica" (1847-59), and the numerous editions of the "London Catalogue of British Plants." His garden at Thames Ditton had long been an object of pilgrimage to botanists desirous of seeing growing specimens of rare or little-known species or varieties of British plants; and his judgment was the last appeal in questions of difficulty. In 1847 he spent three months investigating the flora of the Azores, which was then very little known, and added about 100 species to the flora of the Archipelago, many of which were new to science. Throughout life Mr. Watson was an ardent believer in phrenology; when a student at the University of Edinburgh he became acquainted with George and Andrew Combe; and was for a time editor of the *Phrenological Journal*.

PROF. RAOUL PICTET of Geneva, who has been giving his attention of late to marine architecture, announces, according to the *Times* correspondent, a discovery which, if his anticipations be realised, will effect a revolution in the art of shipbuilding and greatly augment the speed of sea-going and other ships. The discovery consists in a new method of construction and such an arrangement of the keel as will diminish the resistance of the water to the lowest possible point. Vessels built in the fashion devised by Prof. Pictet, instead of sinking their prows in the water as their speed increases, will rise out of the water the faster they go, in such a way that the only parts exposed to the friction of the water will be the sides of the hull and the neighbourhood of the wheel. In other words, ships thus constructed, instead of pushing their way through the water, will glide over it. According to the professor's calculations, in the accuracy of which he has the fullest confidence, steamers built after his design will attain a speed of from 50 to 60 kilometres the hour. A model steamer on the principle he has discovered is in course of construction at Geneva. The machinery has been ordered at Winterthur, and when ready the new vessel will make her trial trip on Lake Lemman.

THE Electrical Exhibition, though now open to the public, seems far from being completely arranged. Our Paris correspondent writes that the English section was opened on Sunday, a result due to the personal exertions of the Earl of Crawford, the English Commissioner, which has caused great satisfaction. The organisation of the English section is highly approved. The evening sittings have been postponed for an indefinite number of days, owing to a series of mistakes in the engineering department. The electrical railway is not ready. In spite of these drawbacks the receipts of the first three days were from 4000 to 5000 francs each. On Sunday they were largely increased, although the fees were diminished by half. We hope shortly to refer to the Exhibition in detail. Independently of the Catalogue, the administration of the Exhibition has published a handbook on Electricity and its Applications, by Armingaud, Becquerel, Bert, Blanco, Breguet, Clerac, Deprez, Fontaine, Mascart, Reynaud, and others. *L'Électricité* has published a "Petit Vocabulaire raisonné" of every word used by electricians, with an introduction by W. de Fonvielle.

It is announced that Miss Pogson, daughter of the Madras Government Astronomer, has been appointed Meteorological Reporter to the Government of that Presidency. Miss Pogson

has for some years discharged with great ability the duties of Assistant Government Astronomer.

WE believe that the Royal Commission which has been constituted for the purpose of inquiring into and reporting upon the facilities for technical education in various countries is now practically complete. It will comprise Messrs. Samuelson, Slagg, Stevenson, and Woodall, the members respectively for Banbury, Manchester, South Shields, and Stoke-upon-Trent. Mr. Swire Smith of Huddersfield, Prof. Roscoe of Manchester, and Mr. Philip Magnus, the director of the City and Guilds of London Institute, have also accepted invitations, and Mr. G. R. Redgrave of the Science and Art Department will probably be selected to accompany the Commission as secretary. It is expected that the Commission will commence its travels about the middle of October.

THE British Association having decided to hold its annual meeting for 1882 at Southampton, a large and influential committee, including the Corporation and magistrates of the borough and the clergy and ministers of all denominations, has been appointed to make the necessary arrangements. A subscription and guarantee fund to cover the requisite expenses of the meeting has been commenced.

THE meeting of the International Congress at Bordeaux on the Phylloxera having been antedated to August 29, is now postponed, on account of the elections, till October 10.

THE Epping Forest and County of Essex Naturalists' Field Club held a Field Meeting at Chelmsford on Saturday, August 13, in conjunction with the subscribers to the "Essex and Chelmsford Museum." The Chelmsford Museum was visited under the guidance of the Rev. R. E. Bartlett, M.A., the hon. curator, and Mr. E. Durrant, the hon. secretary. After lunch the whole party proceeded in drags to Danbury Hill, the ancient camp of which was visited under the guidance of Mr. H. Corder; the company then assembled to hear an address by Prof. G. S. Boulger on "The Origin and Distribution of the British Flora." About six o'clock the party returned to Chelmsford to tea at the "Saracen's Head" Hotel, and an ordinary meeting of the Essex Club was held, the President, Mr. R. Meldola, occupying the chair. The President communicated on behalf of General Pitt-Rivers the report on the excavation of the ancient earthwork at Ambresbury Banks in Epping Forest. It appears that this investigation has been carried out with considerable success, a number of fragments of pottery of British construction having been found beneath the rampart on or near the old surface of the ground. The Club has thus so far settled the date of the camp by a single cutting, and the current theory that it was the work of the Romans must be abandoned. Although undoubtedly British, further excavations will be required before it can be decided whether it dates from before or after the Roman conquest. We are glad to see that the Great Eastern Railway Company has assisted the Club to a great extent by allowing the members to travel at greatly reduced fares on any of their lines within the County of Essex on the occasion of field or of ordinary meetings.

THE *Daily News* correspondent writes that the Swiss Seismological Commission, which, by the co-operation of its numerous members and correspondents, continues the work of simultaneous earthquake observation, has just issued a report on the earthquake of July 22. This shock was felt over a wide area. In France it extended over the departments of Drôme, Isère, Savoy, Upper Savoy, Saône et Loire, Ain, Jura, and Doubs. In Italy it affected chiefly the high valleys of North-Western Piedmont. In Switzerland the movement was observed in the cantons of Geneva, Vaud, Friburg, Neuchâtel, Solothurn, Basel, and the

western districts of Aargau and Berne. From Valence to Basel, and from Chalons-sur-Saône to Suza and Zinzal, the region of disturbance included both sides of the Jura Mountains, besides traversing the great chain of the Alps. It affected an area 350 kilometres long and 250 kilometres wide, equal to 8000 square kilometres of surface. There were two very slight shocks on the evening of July 21, and a feeble shock at 12.10 on the morning of the 22nd. The principal shock, which took place at 2.48 a.m., was followed at 3.30 and 4.30 by two oscillations that were only just perceptible to the senses. The great shock consisted of two quakes and several smaller, but distinct, vibrations. In some localities as many as ten vibrations were counted. Relatively to its extent, the shock was intense; in the neighbourhood of Chambéry and Aix-les-Bains, chimneys fell and walls were fissured. In Switzerland the shock was stronger near the Jura than nearer the Alps, and especially strong at Geneva, in Vaud, and in Neuchâtel. Prof. Forel, who edits the report, remarks on the singular variations in the intensity and direction of the shock even in the same neighbourhood. These differences, which have been observed in previous earthquakes, are too great to be due solely to errors of observation. An earthquake is often more felt in one quarter of a town than in another; and as this variation is irregular, a locality that hardly feels a shock at all on one occasion feeling it on another, it cannot arise from differences in the density of the underlying strata. Prof. Forel offers no explanation of this phenomenon, albeit he thinks it ought to be explained, and craves for it the particular attention of his brother seismologists.

DR. K. VON FRITSCH of Halle discusses the subject of earthquakes in the last issue of the *Verhandlungen* of the Berlin Geographical Society. He maintains that the cause of earthquakes must be sought for at a rather small depth, the greatest depth ascertained not exceeding ten to fourteen miles, and usually far less, whilst rather feeble forces produce earthquakes which are felt at great distances. It is known that Krupp's hammer, which weighs 1000 centners, and falls from a height of three metres, produces sensible concussions on a surface of eight kilometres diameter; whilst the recent explosion of the Leimbach dynamite manufactory was felt at Halle and Merseburg, forty-one and forty-five kilometres distant. Whilst showing how easily concussions are produced by causes comparatively feeble, Dr. Fritsch points out how earthquakes might be and must be produced by the increase and decrease of volume of rocks under the influence of physical and chemical forces, and by concussions, by the opening of crevices in rocks, and by the subsidence of masses of rocks due to these agencies. Many schists are subjected, as is known, to extension, and when crevices arise the schists must enter into oscillations which must produce very varied phenomena, according to the direction and the force of the oscillations, much like to what we see in the oscillations of tuning-plates. Dr. Fritsch concludes by saying that future researches as to the causes of earthquakes ought to be directed especially to the study of the geotectonical conditions of the localities where they occur.

In the course of the excavations for the new fort at Lier, in the neighbourhood of Antwerp, a number of bones of extinct animals, mammoth's teeth, and the almost complete skeleton of a rhinoceros have been dug up. It was in the same district that, in 1760, was found the immense skeleton of a mammoth, which has been preserved in the Natural History Museum at Brussels.

THE Faure accumulators have been tried again by the Paris Omnibus Company on a tramway with a carriage arranged for the purpose. The experiment is said to have been highly successful.

THE Committee formed some time ago for the exploration of the subsidences in Blackheath have published a report, in which,

while giving an account of their proceedings, and the opinions of various geologists for the probable causes of the subsidences, they themselves have come to no definite conclusion.

A CONGRESS has been opened at Bordeaux on the education of the deaf and dumb. In connection therewith the *Journal Officiel* publishes a series of articles by M. Claveau, General Inspector of "Établissements de Bienfaisance," who tries to prove that the method of teaching the deaf and dumb how to speak was invented and practised by St. John of Beverley, Archbishop of York, in 865, and fully described by the Venerable Bede.

THE Meteorological "Centralanstalt" founded by the Swiss Naturalists' Society at Zurich has become a Government Institution by a decree of the Swiss Senate, and now bears the title "Swiss Meteorological Centralanstalt." Herr R. Billwiler has been appointed director, while the Swiss Home Secretary and a special Commission will superintend the Institution.

THE Royal University Bill (Ireland) on Tuesday night last was read a third time in the House of Commons, having been sent down from the House of Lords. It now only awaits the Royal Assent. The programme of the Natural Science course seems framed in accordance with modern views, and when the Scholarships and Exhibitions shall be finally settled by the Senate, we will probably refer again to the subject.

WE notice in the last number of the *Zeitschrift* of the Berlin Geographical Society (vol. xvi, fascicule 3) an interesting description of spring in Madagascar, from the pen of the late Herr J. M. Hildebrandt, who died on May 29 at Antananarivo. Spring arrives about the middle of November, when the cold south-eastern wind which blew throughout the winter, leaving its moisture on the eastern slopes of the highlands, covered with thick forests, and driving before it the savannah fires, gives place to the north-western wind which brings warmth and moisture. The revival of nature under the influence of this wind is well described by Herr Hildebrandt, and his paper contains valuable information as to the flora and fauna of Madagascar.

THE additions to the Zoological Society's Gardens during the past week include an Orange-winged Amazon (*Chrysotis amazonica*) from South America, presented by Mr. R. Seyd; a Grey Ichneumon (*Herpestes griseus*) from India, presented by Sir Patrick Colquhoun; a Herring Gull (*Larus argentatus*), British, presented by Mr. E. A. Brown; a White-crested Touraco (*Corythaix albocristata*) from South Africa, presented by Capt. T. G. Steer; a Black-eared Marmoset (*Hapale penicillata*) from South-East Brazil, presented by Mrs. Alsop; an American Tapir, ♂ (*Tapirus terrestris*) from Trinidad, presented by Herr Fritz Zurcher; two West Indian Agutis (*Dasyprocta cristata*), three Garden's Night Herons (*Nycticorax gardeni*), and two Martinican Doves (*Zenaida martinicana*) from the Antilles, presented by Mr. H. T. Burford Hancock, F.Z.S.; two Stock Doves (*Columba oenas*), British, presented by Mr. A. E. C. Streatfield; two Topela Finches (*Munia topela*) from China, a Nutmeg Finch (*Munia punctularia*) from India, a Javan Nutmeg Finch (*Munia nisoria*) from Java, a Francis Eagle Owl (*Bubo pöensis*) from West Africa, two Aldrovandi's Skinks (*Plestiodon auratus*), and two Pantherine Toads (*Bufo pantherinus*) from North Africa, a Bay Antelope (*Cephalophus dorsalis*) and a Water Chevrotain (*Hyomoshus aquaticus*) from West Africa, purchased; and two Common Marmosets (*Hapale jacchus*) from Brazil, deposited. In the Insectarium may be seen full-fed larvae, now spinning up, of the Atlas (*Attacus atlas*) and Ailanthus (*Attacus cyathia*) Silk-Moths, also freshly-hatched ones of the Marbled White Butterfly (*Arga galatea*) and Scarlet Tiger Moth (*Callimorpha dominula*). Amongst the aquatic forms

examples of *Hydrous piceus* (the large Water-Beetle), *Pelobius hermanni*, *Notonecta glauca* and *Argyroneta aquatica* are at present exhibited.

GEOGRAPHICAL NOTES

THE current number of the Geographical Society's *Proceedings* gives the paper recently read by Mr. Whymper on some of the geographical results of his expedition among the the Ecuadorian Andes, with a diagram of his routes, while Mr. W. G. Lock supplies a contribution on Iceland, which is published at a convenient season for tourists. Mr. Lock's paper refers chiefly to the Askja volcano, the largest in the island, and is illustrated by a map of the east coast of Iceland. In the "Geographical Notes" a brief reference is made to this season's Arctic expeditions, and we are informed that Mr. Leigh Smith has lately sailed from Peterhead on his fifth Arctic expedition; and on reaching Franz-Josef Land he intends to construct a house and refuge at Eira Harbour, and afterwards to get as far north as possible. A very interesting account is given, from a letter recently sent home by M. de Brazza, of the results of his explorations and of the advantages of his route to Stanley Pool by the Ogowe as compared with Mr. Stanley's along the north bank of the Congo. After some news respecting Russian travellers an account is given of Messrs. Soltau's and Stevenson's journey from the Irawaddy to the Yangtze, to which we recently referred. Under "Correspondence" is a letter from Major H. G. Raverty on the Dara'h of Nur, which does not leave a pleasant impression on the reader's mind.

LORD ABERDARE has finally accepted the office of representative of the British Government at the International Congress of Geographers at Venice, and he will of course act as chief delegate of the Geographical Society. The India Office and the Admiralty are sending maps, charts, &c., to the Exhibition, and the former will be represented by Lieut.-General Sir H. Thüillier, late Surveyor-General of India, and the latter by Sir F. J. Evans, Hydrographer of the Navy. It is probable that nothing further will be done to represent this country officially, as the Treasury sternly decline to furnish funds.

THE Italian North-African explorers, Massari and Matteucci, to whose journey we have repeatedly referred, instead of returning by Tripoli, as was expected, struck across the Continent and came out at the Gulf of Guinea. Only a few days ago they arrived at Liverpool, and it is sad to record that, after so successfully accomplishing an arduous work, Dr. Matteucci has succumbed to African fever. He died on the morning of his arrival in London last week; his body has been conveyed to his native city, Bologna. Matteucci was only twenty-nine years of age.

LETTERS from Zanzibar of the 1st ult. notify the arrival there of Mr. Thomson, the African traveller, whose services have been engaged by the Sultan to examine and report on the mineralogy of the mainland. It is his Highness's wish that Mr. Thomson's first surveys should be devoted to the discovery of coal mines, of which several are said to exist not far from the coast. His Highness writes that he intends sending the explorer shortly to Makindary, which is to be the centre of his future operations.

LETTERS from the steamer *Oscar Dickson* have been received at Gothenburg. The steamer, as our readers will remember, was frozen in at the mouth of the Yenisei River in 72° lat. N., and between 76° and 77° long. E. The winter was successfully passed, the difficulties the crew experienced were great, however. The sun was below the horizon for seventy days, and the cold rose to -41° C. During March and April enormous masses of snow fell, so that it covered the ice to a height of seven feet above the ship's deck; the thickness of the ice was seven and a half feet.

WHAT might have been the climate during the Glacial Period is the subject of an interesting paper published by Dr. Woeikoff in the last issue of the *Zeitschrift* of the Berlin Geographical Society (vol. xvi. fasc. 3). It is well established now that for the formation of glaciers, not only a sufficiently low temperature is necessary, but also a sufficient supply of moisture in the atmosphere. Thus, on the Woznesensky gold-mine, which lies at a height of 920 metres and has a mean temperature of -9° Celsius, but a rather dry climate, we have no glaciers, nor in the Verkhojansk Mountains, where the mean temperature is as low as -15°6, and the temperature of January is -48°6. To show

these differences Dr. Woeikoff prepares a table of the temperatures at the lowest ends of glaciers, and we see from his figures that in Western Norway, at the end of the Jostedal glacier (400 metres high), the mean temperature is 4°8 Cels., 5°8 at the end of the Mont Blanc glaciers (1099 metres), 6°8 at the Karakorum glaciers in Tibet (3012 metres), and even 7° on the western slope (212 metres) of the New Zealand highlands, and 10° on the eastern slope (835 metres). In other countries, as, for instance, on the Mounkou Sardy Mountain, in Eastern Siberia (3270 metres), the mean temperature at the end of the glaciers is as low as -10°2, and -2°4 in the Daghestan Mountains of the Caucasus. Thus the difference of mean temperatures at the lower ends of glaciers reaches as much as fully 20°. Besides we see that, provided the quantity of rain and snow is great, glaciers descend as low as 212 metres above the sea-level in a country (New Zealand) which has the latitude of Nice and the mean temperature of Vienna and Brussels, that is, higher than that of Geneva, Odessa, and Astrakhan, whilst the average temperature of winter is higher there than that at Florence. Further, Dr. Woeikoff discusses the rather neglected influence of large masses of snow upon the temperature of a country during the summer, and by means of very interesting calculations he shows how much the temperature of summer in higher latitudes is below what it ought to be in consequence of heat received from the sun, and *vice versa* during the winter, these differences being due on the one side to the refrigerating power of snow, and on the other side to the heating power of sea-currents. In a following paper he proposes to discuss the other causes which might have influenced the climate of different parts of the earth during the Glacial period.

WE notice in the *Verhandlungen* of the Berlin Geographical Society (vol. viii. fascicle 5) a full report on the surveys which were made in the Russian Empire, including Caucasus, Siberia, Turkestan, and the Orenburg military district, during the year 1880. This is translated from the official report published in the organ of the Ministry of War.

DURING the last session of the German Reichstag, Dr. Thilenius, Prof. Virchow, and Herr von Wedell Malchow presented a petition to the Government requesting the participation of Germany in the exploration of the Polar regions proposed by the late Karl Weyprecht in the interest of meteorology, geology, and other sciences. It is now announced that the German Government will probably soon take steps in this direction, and will first give its principal attention to securing the co-operation of other nations.

HEFT VIII. of Petermann's *Mittheilungen* begins with a paper by Dr. Danckelman on the Temperature Conditions of the Russian Empire, after Dr. Wild. The other papers are on M. Desiré Charnay's Expedition in Central America, Dr. I. B. Balfour's visit to Socotra, the Irawaddy above Bamo according to the data collected by the Indian Pundit in 1879-80 (with a map), and an article on the unfortunate Flatters Expedition by Dr. Rohlf.

IN the *Bulletin* of the Antwerp Geographical Society (tome vi. 2^e fasc.) is a paper of much interest by Dr. Delgeur on the Geographical Knowledge of the Ancient Egyptians.

MESSRS. LONGMANS AND STANFORD have published an enlarged edition of the Alpine Club Map of Switzerland. As it is issued in a number of separate sheets, it ought to prove useful to tourists.

THE Geographical Society of Lisbon has resolved to send an exploring party into the Sierra d'Estrella for scientific investigation. The mountain chain in question has never been scientifically explored.

IN 1879 Mr. L. Loth, a Government surveyor in Dutch Guiana, made a survey of a considerable portion of the River Saramaca, and his map of its course, on the scale of 1 : 400,000, together with an account of his expedition, has lately been published in the *Transactions* of the Amsterdam Geographical Society.

THE *Oesterreichische Monatsschrift für den Orient* of this month contains an interesting article on the new Conseil de Santé et d'Hygiène publique en Egypte by Prof. v. Sigmund, a well-known authority of the Medical High College of Vienna. Amongst various other papers we may mention an essay on Japanese paper manufacture by Dr. Rudel of Dresden, and an article on the wines of Cyprus by Dr. Richter of Larnaca.